Sustainable Seas Expeditions
Cruise Plan Format – UPDATE 3/8/99

The following is the outline/format for preparing cruise plans for the Sustainable Seas Expeditions. The cruise plan will serve as the primary document for orchestrating activities and events during the mission. As such, the plan is a "blueprint" for organizing the work to be done, and provides the information required for making decisions as conditions change. This outline follows the existing format as specified in the NOAA directive, with some clarifications unique to the character of the SSE. If you have any questions, please contact:

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Note, the following sections contain "Blanket Statements" to incorporate verbatim into your cruise plan:

- *Sponsoring Institution*
- *1.0 ORGANIZATIONAL STRUCTURE*
- *8.0 DATA RESPONSIBILITIES*
- *10.1, 10.1.1, – Statements on Ancillary Projects*
- *11.1, 11.3, 11.4, 11.5 – Statements listed under "Miscellaneous"*
- *12.0 COMMUNICATIONS*

NAME National Marine Sanctuary
Mailing Address
City, State, Zip
Office Phone Number

Date, 1999

CRUISE INSTRUCTIONS: Indicate Final or Draft

NOAA Ship: McARTHUR

Cruise Number: AR-99-XX **(Dana Wilkes will supply appropriate #)**

Cruise Title: Sustainable Seas Expeditions

Study Area: NAME National Marine Sanctuary (XYNMS)

Sponsoring Institution: NOAA's National Ocean Service (NOS), Sustainable Seas Expedition (SSE), National Geographic Society (NGS)

Cruise Description and Objectives: One paragraph reflecting the exploration, scientific, education, and promotional objectives of the cruise

Synopsis of Scientific Measurements: Scientists will record

Chief Scientist: Name

1.0 ORGANIZATIONAL STRUCTURE – *(Definition of specific roles/ responsibilities are currently being negotiated and will be forwarded to you)*

1.1 STRUCTURE

- *Commanding Officer* - Final approval authority for all operations, including (in conjunction with the Dive Supervisor) the decision to launch the sub.
- *Chief Scientist* -
- *Mission Coordinator* –
- *Dive Supervisor* - Responsible for the procedures and coordination of all dive operations, makes final decision in conjunction with the Commanding Officer to launch the sub.
- *Principal Investigator* - Responsible for the individual project content.
- *Pilot* - Certified DeepWorker pilot approved for the specific mission dive.
- *Mission Log Coordinator* – Responsible for compiling the Mission Log for the NGS SSE Web site.

1.2 PROTOCOL

Dive Authority – The Commanding Officer and the Dive Supervisor will make the final decision on dive operations.

Project implementation –

2.0 OVERVIEW OF OPERATIONS

General statement of organizations involved, starting and ending dates, and general areas to be visited. Section 4 will provide summary descriptions of each project, and appendices A and B will provide details on the locations of dive operations.

3.0 ITINERARY

A day-by-day synopsis of daily activities and the times of major actions only. **Specific times of daily events will be put in the Plan of the Day (POD), i.e., pre-dive brief. Details on Projects will be noted in Section 4.0. The following is a sample itinerary, Project # and Dive # correlate directly with Section 4.0:**

APRIL

28	0700	All scientists onboard
	0800	Ship departs pier 45, San Francisco
	1030	Ship on-site, East Landing, Southeast Farallone Islands
	1200	DeepWorker transect, Project #1 – Dive #1
	1600	DeepWorker transect, Project #1 – Dive #2
	2100	Ship on station, Shubrick Point, Southeast Farallone Islands Ecosystem Dynamics Study – plankton work and Seacat casts
29	0800	Ship on-site, East Landing, Southeast Farallone Islands
	1030	DeepWorker transect, Project #2 – Dive #1

4.0 PROJECT DESCRIPTIONS

Project descriptions provide summary information on each project. Appendix A will list geographic positions of transects, sites, and stations. Use the following format and include any contingency dives (NOTE: Contingency dives provide information on potential alternative dives to be conducted if a scheduled project cannot be conducted at the primary or alternative locations).

4.1 DIVE PROJECTS

Project #1: *Habitat Characterization*
Principal Investigator: *Stan Smith*
Objective: Plain language objective
Task: Physical work description *(i.e., Conduct video transects, take still photographs)*

Dive #	Pilots	Location	Max Dive Depth	Depth to Bottom	Duration
1	*Stan Smith*	*38˚00 – 122˚56*	*100'*	*165'*	*2.5 hrs.*
2	*Jane Doe*	*37˚49 – 123˚12*	*130'*	*220'*	*2.5 hrs.*

Potential Safety Concerns: (i.e., entanglement, adverse currents, distance to drop-offs, etc.)
Alt Site: Location/Depth
Equip Sub: Any special equipment required on the sub
Equip Ship: Any special equipment required from the ship
Other Considerations: Any pertinent information useful to help ensure successful dives.

Project Dive #2: *Assess Abundance of Red Abalone*
Principal Investigator: *John Doe*
Objective: Plain language objective
Task: Physical work description *(i.e., Conduct video transects, take still photographs)*

Dive #	Pilots	Location	Max Dive Depth	Depth to Bottom	Duration
1	*John Doe*	*37˚43 – 122˚49*	*300'*	*300'*	*2.5 hrs.*
2	*Stan Smith*	*38˚10 – 123˚00*	*200'*	*200'*	*2.5 hrs.*

Potential Safety Concerns: (i.e., entanglement, adverse currents, distance to drop-offs, etc.)
Alt Site: Location/Depth
Equip Sub: Any special equipment required on the sub
Equip Ship: Any special equipment required from the ship
Other Considerations: Any pertinent information useful to help ensure successful dives.

Contingency Dive: *Investigate Shubrick Point Ledge*
Principal investigator: *John Doe*
Objective: Plain language objective
Task: Physical work description *(i.e., Conduct video transects, take still photographs)*

Dive #	Pilots	Location	Max Dive Depth	Depth to Bottom	Duration
1	*John Doe*	*37˚43 – 122˚49*	*300'*	*300'*	*4 hrs.*

Potential Safety Concerns: (i.e., entanglement, adverse currents, distance to drop-offs, etc.)
Alt Site: Location/Depth
Equip Sub: Any special equipment required on the sub
Equip Ship: Any special equipment required from the ship
Other Considerations: Any pertinent information useful to help ensure successful dives.

4.2 OTHER PROJECTS - These are projects related to the cruise, but do not involve dive operations. Examples include open houses, media events, etc. Please use the following format to provide information on these projects:

Event Name: *Open House*
Purpose: *Support SSE and Sanctuary*
Primary Participants: *Sylvia Earle*
Location: *San Francisco, Pier 45*
Date and Time: *April 27, 1200 - 1800*
Alternative Date and Time: *April 30, 1200 - 1800*
Specific Request from Ship, i.e., meal, exhibits, decorations...

4.3 ADDITIONAL PROJECTS (was section 10.1.2) - Any other work done during the cruise period will be subordinate to the main project and performed so as to not interfere with that outlined in these instructions. The Chief Scientist will be responsible for determining the priority of additional work relative to the main project.

Additional Projects are related to the cruise, but are to be conducted at night or during extended down times of the SSE. Examples include side-scan sonar or net tow operations. Please use the following format to provide information on these projects:

Project Title: *Ecosystem Dynamics Study*
Principal Investigator: *John Doe*
Objective: Plain language objective
Task: Physical work description *(Seacat casts)*
Location: *Shubrick Point, Southeast Farallone Islands*
Alt Site: Location: *East Landing, Southeast Farallone Islands*
Equip Ship: Any special equipment required from the ship
Equip Scientific Party: Any special equipment provided by the scientific party
Other Considerations: Any pertinent information useful to help ensure a successful project.

5.0 OPERATIONAL PLANS

The following operational plans can only be considered a guide as to how the Chief Scientist expects the work to progress without being able to predict the weather, operational and scheduling problems, and equipment failures. Note: this Section provides for 1-2 paragraphs describing how events are anticipated to unfold.

5.1 SSE DIVE PROJECTS – *For example: All dive projects will include visual observation, as well as video and voice documentation. Each pilot will be required to stop every 15 minutes to perform system checks and communicate with the dive crew….*

5.2 ADDITIONAL PROJECTS – *For example: The Ecosystem Dynamics Study will require the use of a _____ winch deploying a _____ net to be towed at a rate of 1-2 knots at a wire angle of 45˚. Tow duration will last 12 minutes.……*

6.0 CONTACT PERSONNEL

Scientific Operations:

NAME National Marine Sanctuary	Chief Scientist
Name	Name
Address	Address
City, State, Zip	City, State, Zip
Phone Number, O, F, C, P	Phone Number, O, F, C, P

Ship Operations:

NOAA Pacific Marine Center
LT Dana Wilkes
1801 Fairview Ave, E.
Seattle, WA, 98102
Office - 206-553-4548 Fax - 206-553-1109

7.0 SCIENTIFIC PERSONNEL

7.1 The Chief Scientist is authorized to alter the scientific portion of this cruise plan with the concurrence of the Commanding Officer, provided that the proposed changes will not: (1) jeopardize the safety of personnel or the ship (2) exceed the time allotted for the cruise (3) result in undue additional expense or (4) change the general intent of the project.

7.2 PARTICIPATING SCIENTISTS

NAME	Gender/Nationality	Project	Organization	Date*

*include dates if not aboard for entire project.

7.3 PARTICIPATING TECHNICIANS

NAME	Gender/Nationality	Project	Organization	Date*

7.4 OTHER PERSONNEL

7.5 MEDICAL FORMS

All personnel participating on board will complete a NOAA health Services Questionnaire prior to embarking on the vessel. The Mission Coordinator will collect the forms and submit them to PMC Health Services30 days in advance of the cruise for release. The forms are to be sent together in an envelope marked “Medical Forms” with the cruise number.

8.0 DATA RESPONSIBILITIES

8.1 DATA AND SAMPLES

8.1.1 The Chief Scientist via the Mission Coordinator is responsible for the data quality, disposition, and archiving of data and samples collected aboard the ship for the primary project. As the representative of the cruise sponsor, the Chief Scientist is also responsible for the dissemination of copies of these data to participants on the cruise and to any other requesters.

8.1.2 The Commanding Officer will give the acting Chief Scientist a single copy of all data collected by ship's personnel. The ships Scientific Computer System (SCS) will collect data continuously during the project. The SCS data will be provided to the Chief Scientist at the completion of the project. The Chief Scientist will provide the Commanding Officer a list of all data collected by the scientific party.

8.1.3 the Commanding Officer is responsible for all data collected for ancillary projects until those data have been transferred to the projects' Principal Investigator.

8.2 RECORDS AND REPORTS

8.2.1 Marine Operations Abstract (MOA). McARTHUR's officers will maintain the MOA during the cruise. The ship's position will be entered for all operations, and otherwise every 30 minutes or when changing course or speed. The Commanding Officer will give the Mission Coordinator a copy of the MOA at the completion of the project.

8.2.2 Dive Checkout forms will be used to check out the sub prior to each dive and are the responsibility of the pilot and dive crew. Post dive, the forms will be signed by the Dive Supervisor.

8.2.3 Dive Logs will be used to keep track of the subs performance during each dive and are the responsibility of the Dive Supervisor or designee.

8.2.4 The Mission Coordinators Log will provide an accounting of the project work being conducted during each dive and are the responsibility of the Mission Coordinator.

8.2.5 The Mission Log will be based on a compilation of materials collected during dive operations (audio, video, photographs) and information collected post-dive (text provided by pilots), and will be posted on the NGS SSE Web site. The Mission Log is the responsibility of the Mission Log Coordinator.

8.2.6 The Mission Coordinator will complete the Ships Operations Evaluation Form and forward to the Office of NOAA Corps Operations.

8.2.7 All film collected during the cruise will be handled in accordance with the MOU between NOAA and NGS.

9.0 EQUIPMENT LISTS

9.1 SUPPLIED BY THE SCIENTIFIC PARTY:
(A)

9.2 SUPPLIED BY THE McARTHUR:
(A)

9.3 SUPPLIED WITH THE SUBMERSIBLE: (Will be provided)
(A)

10.0 ANCILLARY PROJECTS

10.1 ANCILLARY PROJECTS: Ancillary projects are secondary to the objectives of the cruise, should be treated as additional investigations, do not have representation aboard, and are accomplished by the ship's force.

10.1.1 Ancillary tasks will be accomplished in accordance with the NOAA Fleet Standing Ancillary Instructions.

11.0 MISCELLANEOUS

11.1 Navigation Control: Shipboard DGPS provided for vessel. Submersible navigation provided by NUYTCO

11.2 Required Compliance: The Chief Scientist will require each Mission Coordinator to contact local authorities to increase the safety and awareness of the operations. These authorities include :

11.2.1 US Coast Guard Station responsible for the area of coverage in the cruise instructions.

11.2.2 Local Notice to Mariners in the district concerning the area covered in the cruise instructions.

11.2.3 Port Authority or Harbor master for potential dive sites.

11.3 All NOAA scientists, technicians, and program support personnel, including non-NOAA personnel who are working aboard in direct support of a program's mission, including volunteers and teachers-at-sea, are provided subsistence from the general mess at no cost in accordance with MOC Directive 98-02.

11.4 Pre-Cruise Meeting: A pre-cruise meeting between the Chief Scientist, the Commanding Officer, the Mission Coordinator, and the Dive Supervisor will be held prior to the commencement of operations to do a final review of the cruise plan.

11.5 Post-Cruise debrief: A post-cruise debriefing between the Chief Scientist, the Commanding Officer, the Mission Coordinator, the Dive Supervisor, and the Mission Coordinator for the next site will be held to review any problems that occurred.

11.6 HAZMATS

12.0 COMMUNICATIONS

12.1 McARTHUR will communicate daily, Monday through Friday, with the Pacific Marine Center. Normally this will be via message, but radio contact will be maintained when possible.

12.2 Because the scientific staff must sometimes communicate with other research vessels, commercial vessels, and shore-based NOAA facilities, the Chief Scientist or his designee may request the use of radio transceivers aboard the vessel.

12.3 McARTHUR is equipped with INMARSAT phone (9-011-872-150-0431), cellular phone (Ship # 206-669-4438, Scientific # 206-669-4437), and VHF radio (call sign WTEJ). The Chief Scientist may need access to these systems with permission from the Commanding Officer. The Commanding Officer will provide the Chief Scientist with a log of all calls made from the ship by the scientific party at the completion of the project.

13.0 APPENDICES

(A) List of Coordinates for tracklines or stations.
(B) Chartlets
(C) Emergency Contact phone number
(D) Shuttle/Launch schedule (include vessel name(s) and # of berths)

_____	_____	_____	_____
John C. Albright	Date	Sylvia Earle	Date
Rear Admiral, NOAA		Chief Scientist	
Director, Pacific Marine Center		Sustainable Seas Expeditions	

_____	_____
Name	Date
Mission Coordinator	
XYNMS	